CONTRA COSTA
WATER DISTRICT

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January 14, 1997

Mr. Rick Woodard, Manager
Water Quality Program
CALFED Bay-Delta Program
1416 Ninth Street, Suite 1155
Sacramento, California 95814

Subject: Additional comments on CALFED water quality projects for early implementation

Dear Mr. Woodard:

The Contra Costa Water District would like to offer the following additional comments on the selection of specific projects for early implementation by CALFED to improve Delta water quality. The District has submitted initial comments in a January 10, 1997 letter on this subject.

One of the major goals of the CALFED Water Quality Program is to ensure that Delta water quality meets future drinking water regulations. The California Urban Water Agencies ("CUWA") recently asked a panel of water quality experts to determine the source water quality needed to ensure that urban water users will be able to meet future drinking water regulations. The expert panel's draft conclusion is that, due to the possibility of more stringent future regulations on both pathogens removal (especially *Cryptosporidium*) and disinfection-byproducts, urban water agencies might be required to turn to ozonation, and a source water concentration as low as 0.050 mg/L bromide might be required to meet these future regulations.

There are a number of uncertainties in the estimate of the bromide concentration limit, which is assumed to correspond to a bromate concentration of 0.005 mg/L in the treated water. The relationship between bromate concentration in the treated water and bromide concentration in the source water is quite variable, even among different CUWA facilities using the same source water. There are also very little data at low bromide concentration.

A pilot study is needed to investigate the formation of bromate and other disinfection by-products at low bromide concentration (0.100 mg/L or less). The study should aim to obtain a better understanding on the relationship between bromate and bromide concentration, the variability of this relationship to the concentrations of other constituents in the source water, and the variability of bromate formation with the specific ozonation process. The study should also explore methods to reduce bromate formation during the ozonation process and removal technology (of both bromide and other critical constituents in source water and bromate in treated water). This study would need to be carried out as soon as possible so that the results could be used in CALFED's development of a preferred Bay-Delta Alternative. This study could be done in collaboration with CUWA.

The District recommends that CALFED and CUWA discuss this suggestion further. If you have any questions please contact me at (510) 688-8187.

Sincerely,

Richard A. Denton, Ph.D., P.E.
Water Resources Manager

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